II. DRAWING AMENDMENT

A replacement sheet of drawing having Fig. 1 thereon is presented herewith, wherein Fig. 1 has been amended to indicate "Prior Art".

IV. REMARKS

In the Office Action, correction was required in Fig. 1 of the drawing to identify the figure as being prior art. This requirement for correction of the drawing is met by enclosing herewith a copy of Fig. 1, on a sheet of drawing identified as a Replacement Sheet, with the amended figure including the legend "Prior Art".

Correction was required of the specification by inclusion of an abstract on a separate sheet. An abstract has been prepared, and is included with this response, wherein the abstract presents the same information as appears in the abstract on the first page of the priority document of the PCT published application WO 00/31885. Section headings are also provided in the specification.

In Point 4 of the Office Action, the examiner discussed the matter of priority. The examiner omits discussion of the PCT application PCT/FI99/00974 of which the present application is a National Stage application. PCT application PCT/FI99/00974 claims priority in the Finland application 982559 filed 26 November 1998. Accordingly, it is urged that there is a proper chain of priority from the present application back to the original application in Finland.

In Point 5 of the Action, a listing of objections to the claim language is presented. The claims have been amended to overcome these objections.

Claims 1, 3-4 and 11 were rejected under 35 U.S.C. 103 as being unpatentable over Isberg (US 6,029, 052) in view of Auvray (US 5,564,076) for reasons set forth in the Action.

Claims 2, 12 and 20 were rejected under 35 U.S.C. 103 as being unpatentable over Auvray (US 5,564,076) in view of Razavi (RF Microelectronics, copyright 1998) for reasons set forth in the Action.

Claims 4, 5, 6-7, 8, 9, 10, and 13 were rejected under 35 U.S.C. 103 as being unpatentable over Isberg (US 6,029, 052) in view of Auvray (US 5,564,076) in combination with various ones of Smith (US 5,796,772), Rich (US 5,758,271), Auvray (US 5,953,641), Duong (US 5,511,235), Eklof (US 6,308,052), Heck (US 5,483,691), and Abbey (US 6,151,354) for reasons set forth in the Action.

Claims 14, 15-16, 17, and 18-19 were rejected under 35 U.S.C. 103 as being unpatentable over Auvray (US 5,564,076) in view of Razavi in combination with various ones of Sim (US 5,825,809), Auvray (US 5,953,641), Igarashi (US 5,926,749), and Smith for reasons set forth in the Action.

The following argument is presented to overcome the foregoing rejections and to show the presence of allowable subject matter in the claims as amended.

In the matter of priority, Applicant claims the benefit of the filing of the application in Finland in 1998. As pointed out above, the Applicant is entitled to the 1998 filing date of the priority application in Finland and, therefore, the rejections (35 U.S.C. 103/102(b)) of claims 2, 12, and 14-20 based on Razavi (in combination with other references) are overcome by reliance on the priority date.

An important feature of the present invention relates to using the same components for processing signals of alternative radio interfaces in a receiver or a transmitter. In this fashion, it is possible to reduce the complexity and production cost of the

device. The advantage is especially remarkable when the number of high frequency components can be reduced. This is accomplished with the amplifier for and the mixer 5 of the receiver (Fig. 2 in the present application) and the mixer 16 and the amplifiers 17 and 18 of the transmitter.

A further feature of the present invention is using at carrier frequency a bandpass filter, which has an adjustable or tunable pass band. This makes it possible to use different pass bands for different radio interfaces without a need for separate sets of filtering means for each radio interface.

The amendments to the independent claims emphasize the foregoing features. The documents cited by the examiner do not disclose all the features, and therefore, it is not possible to achieve all the advantages of the present invention. For example, Isberg clearly discloses separate amplifiers (34a, 34b) and mixers (40a, 41a, 40b, 41b), contrary to the principles of the present invention.

In order to distinguish the claims further from the teachings of the cited art, features of original claims 13, 14 and 15 are included in claims 2 and 12. Claims 13, 14 and 15 are cancelled in view of the inclusion of their features in amended claims 2 and 12.

In Auvray '076 the two transmission frequency bands are very close to each other. Therefore it is easier to use some same RF components for the two frequency bands. The present invention relates to systems where there is no such restriction on the frequency bands, and the frequency bands may be further apart in frequency. To achieve this, the transmit frequency is preferably

generated with a synthesizer, which has a frequency divider for dividing the synthesizer output frequency for producing the transmission signal frequency of at least one radio interface. When transmit frequency bands are far apart in frequency, the prior art solutions require completely separate RF components in the transmitter signal line. In the present invention, contrary to the prior art teaching, same mixer and amplifier are used for at least two radio interfaces.

Furthermore, with respect to Auvray (US 5,564,076), in the receiver of Auvray (US 5,564,076) the amplifier 240 and mixer 241 only process the carrier frequency signal received from antenna 226. Amplifier 223 and mixer 228 only process the carrier frequency signal received from antenna 221. Amplifier 223 and mixer 228 do not process the carrier frequency signal received from antenna 226, because the signal frequency is reduced in mixer 241. Therefore Auvray does not disclose a solution where carrier frequency signal from two radio interfaces are processed with one and same amplifier or mixer. This teaching of Auvray is not negated by combining the Auvray teachings with other ones of the references. And if another reference were to suggest use of a common element for a plurality of signal channels, there would be no motivation to combine the references.

The claims 1 and 3 are amended to include a tunable or adjustable filter. Support for this amendment is disclosed in the original application e.g. on page 6, lines 16-23.

In view of the foregoing amendment and argument, it is urged that the foregoing rejections have been overcome to provide for allowable subject matter in the claims.

For all of the foregoing reasons, it is respectfully submitted that all of the claims now present in the application are clearly novel and patentable over the prior art of record, and are in proper form for allowance. Accordingly, favorable reconsideration and allowance is respectfully requested. Should any unresolved issues remain, the Examiner is invited to call Applicants' attorney at the telephone number indicated below.

A check in the amount of $1,020.00 is enclosed for a 3 month extension of time fee. The Commissioner is hereby authorized to charge payment for any fees associated with this communication or credit any over payment to Deposit Account No. 16-1350.

Respectfully submitted,

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19 April 2005
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CERTIFICATE OF MAILING

I hereby certify that this correspondence is being deposited with the United States Postal Service on the date indicated below as first class mail in an envelope addressed to Mail Stop Amendment, Commissioner of Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

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